

WHAT IS CLAIMED IS:

1. A modular prosthesis kit comprising:

at least two differently sized stems, each stem including a tapered bore having a distal portion and a proximal portion and a neck registration element located in the distal portion of the bore; and

a plurality of necks, each of the necks having a proximal end and a distal end, the distal end including a tapered portion configured to taper lock in the tapered bore and a stem registration element at the distal end, the plurality of necks including a first neck having a stem registration element that cooperates with the neck registration element of at least one stem to permit the first neck to taper lock in the bore of at least one stem in one position and to prevent the first neck from taper locking in the bore of at least one stem in at least one position.

2. The kit of claim 1, wherein the plurality of necks further includes at least one non-fitting neck having a stem registration element that prevents the at least one non-fitting neck from taper locking in the bore of at least one of the stems in any position.

3. The kit of claim 1, wherein the plurality of necks includes at least one fitting neck having a stem registration element that permits the at least one fitting neck to taper lock in the bore of the at least one of the stems in at least two positions.

4. The kit of claim 3, wherein the plurality of necks includes at least one non-fitting neck having a stem registration element that prevents the at least one non-fitting neck from taper locking in the bore of at least one pre-selected stem.

5. The kit of claim 1, wherein the stem registration element includes a shaped tab extending

longitudinally from the distal end of the neck and the neck registration element includes a shaped slot in the distal portion of the bore such that the tab of the first neck can register with the slot of at least one of the stems to allow the tapered end portion of the first neck to taper lock in the bore of the stem in at least one position and the tab of the first neck cannot register in the slot of the at least one stem to prevent the tapered end portion of the first neck from taper locking in the bore of at least one stem in one position.

6. The kit of claim 5, wherein the tab of at least one of the first necks is eccentric with respect to the center of the tapered end of the neck such that the tab cannot register with the slot in the bore of at least one stem and prevents taper locking of the tapered end of the first neck in the bore of at least one stem in at least one position.

7. The kit of claim 6, wherein the slot in the bore of the at least one stem and the tab of the first neck are configured to register such that the tapered end of the first neck can taper lock in the bore of the at least one stem in at least one position.

8. The kit of claim 7, wherein the slot of at least one of the stems is eccentric with respect to the center of the bore.

9. The kit of claim 5, wherein each of the shaped slots has a major axis and a minor axis and the each of the tabs have a major axis and a minor axis.

10. The kit of claim 9, wherein the tabs and slots are elliptical in cross-section.

11. The kit of claim 9, wherein the tab and the slot are substantially the same size in cross-section.

12. The kit of claim 2, wherein the stem registration element on each neck includes a shaped tab extending longitudinally from the distal end of the neck and the neck registration element on each stem includes a shaped slot, wherein the tab of at least one of the non-fitting necks and the slot of the at least one stem are configured such that the tab of at least one of the non-fitting necks cannot register in the slot of the at least one stem to prevent the tapered end of the non-fitting neck to taper lock.

13. The kit of claim 12, wherein the tab on the non-fitting neck is larger than the slot of the at least one stem in at least one dimension.

14. The kit of claim 13, wherein the tab has a length dimension along the longitudinal axis of the stem and the slot has a depth dimension, and the length of the tab of the at least one non-fitting neck is greater than the depth of the slot of at least one stem.

15. The kit of claim 12, wherein the slots have a major axis and a minor axis and the tabs have a major axis and a minor axis.

16. The kit of claim 15, wherein the major axis of the tab of the at least one non-fitting neck is larger than the major axis of the slot of at least one stem.

17. The kit of claim 15, wherein the minor axis of the tab of at least one non-fitting neck is larger than the minor axis of the slot of at least one stem.

18. The kit of claim 12, wherein the tab on the at least one non-fitting neck has a different shape than the slot of at least one of the stems.

19. The kit of claim 15, wherein the tabs and slots are elliptical in cross-section.

20. The kit of claim 3, wherein the stem registration element of each neck includes a shaped tab extending longitudinally from the distal end of the neck and the neck registration element of each stem includes a shaped slot, wherein the tab of the at least one fitting neck and the slot of the at least one stem are configured such that the tab of the at least one fitting neck can register in the slot of the at least one stem in two positions to permit the tapered end of the at least one fitting neck to taper lock in the bore of the at least one stem.

21. The kit of claim 20, wherein the tab of the at least one fitting neck and the slot of stem each have a major axis and a minor axis.

22. The kit of claim 21, wherein the size of the tab of the at least one fitting neck and the slot of at least one of the stems are substantially the same.

23. The kit of claim 21, wherein the tab of the at least one fitting neck is smaller in at least one dimension than the slot of the at least one stem.

24. The kit of claim 1, wherein the stem registration element of each neck includes a slot and the neck registration element of each stem includes a tab.

25. A modular prosthesis kit comprising:

a plurality of differently sized stems, each stem including a tapered bore having a distal portion and a proximal portion and a neck registration element on the distal portion of the bore;

a plurality of necks having different lengths and angles, each of the necks having a conical taper on a distal end of the neck configured to taper lock in a bore and a stem registration element longitudinally extending from the distal end of each neck, wherein a first neck of a predetermined length and angle has stem registration element that can

register with the neck registration element of at least one of the stems in only one position to permit the first neck to taper lock with bore of the at least one stem in only one position and a second neck of a predetermined length and angle has a stem registration element that can register with at least one of the stems in multiple positions and permit the second neck to taper lock in the bore of the at least one stem in multiple positions.

26. The kit of claim 25, further comprising a third neck of a predetermined length and angle having a stem registration element that cannot register with the neck registration element of at least one stem in any position preventing taper locking of the third neck with the at least one stem in any position.

27. The kit of claim 26, wherein the stem registration element includes a shaped tab, and the neck registration element includes a shaped slot.

28. The kit of claim 27, wherein the tab of the first neck is eccentric with respect to the tapered end of the neck.

29. The kit of claim 27, wherein the tab of the second neck is smaller than the slot in at least one dimension.

30. The kit of claim 29, wherein the tab and slot have a cross-sectional shape with a major axis and a minor axis.

31. The kit of claim 30, wherein the tab and slot have an elliptical cross-sectional shape.

32. The kit of claim 30, wherein the major axis of the tab is shorter than the major axis of the slot.

33. The kit of claim 27, wherein the cross-sectional shape and size of the tab and the slot are substantially similar.

34. The kit of claim 27, wherein the tab of the third neck is larger in one dimension than the shaped slot of at least one stem in a corresponding direction.

35. The kit of claim 34, wherein the tab of the third neck has a length dimension along the longitudinal axis of the neck that is greater than the depth of the shaped slot of at least one stem.

36. The kit of claim 34, wherein the shaped tab of the third stem and the shaped slot of at least one neck each have a major axis and a minor axis.

37. The kit of claim 26, wherein the stem registration element of each neck includes a shaped slot and the neck registration element of the stems includes a shaped tab.

38. A modular prosthesis kit comprising:

at least two differently sized stems, each stem including tapered bore having a distal portion and a proximal portion and a neck registration element on the distal portion of the bore;

a plurality of necks, each neck having a tapered distal end and a stem registration element on the distal end of the neck, wherein the plurality of necks includes a first neck having a stem registration element that can register with the neck registration element of at least one stem in more than one position, a second neck having a stem registration element that can register with the neck registration element of at least one stem in only one position, and a third neck having a stem registration element that cannot register with at least one neck in any position.

39. A kit for a modular prosthesis comprising:

a plurality of stems, each stem including a conically tapered bore having an open end and a bore portion

opposite said open end, said bore including a registration element therein;

a plurality of necks each having a conically tapered end for mating with the tapered bores of each of said stems and a registration element for engaging the bore registration element on at least one of said stems in a manner allowing a locking engagement of said tapered bore and said tapered neck portion in at least one circumferential position of said tapers;

at least one neck of said plurality of necks having a registration element allowing locking engagement with at least one stem in at least two circumferential positions of said tapers; and

at least one neck of said plurality of necks having a registration element which engages said registration element of at least one of said stems in a manner which prevents said tapered bore and said tapered neck portion from locking engagement in any circumferential position.

40. The kit of claim 39, wherein the registration element in the bore includes a slot.

41. The kit of claim 40, wherein the registration element on the necks includes a tab extending longitudinally from an end thereof.

42. The kit of claim 41, wherein the registration elements include a major axis and a minor axis.

43. The kit of claim 42, wherein the registration elements are substantially elliptical in shape.

44. The kit of claim 43, wherein the tab on the neck of said plurality of necks having a registration element allowing engagement with at least one stem in at least one circumferential position is elongated along the major axis in one direction.

45. The kit of claim 44, wherein the tab on the at least one neck of said plurality of necks having a registration element which prevents locking engagement of said neck in any circumferential position is elongated along the major axis in one direction

46. A kit for a modular prosthesis comprising:

a plurality of stems having a conically tapered locking portion extending along an axis, said stem conically tapered locking portions including a registration element;

a plurality of necks having a conically tapered locking portion for lockingly engaging said stem tapered locking portion along said axis, said neck conically tapered locking portion including a registration element selectively engagable with said stem registration element to allow or prevent a locking engagement of said stem and neck tapered locking portions;

each of said plurality of necks having a registration element engagable with the stem registration element of at least one of said plurality of stems in at least one circumferential position about said axis allowing the locking engagement of said conically tapered stem and neck locking portions and at least one neck of said plurality of necks having a registration element which engages the registration element of at least one of said stems in a manner which prevents the engagement of said stem and neck locking portions in any circumferential position.

47. The kit as set forth in claim 46 further comprising at least one neck of said plurality of necks having a registration element allowing locking engagement with at least one stem in at least two circumferential positions about said axis.